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QUALITY CONTROL PLAN FOR SOIL REMEDIATION AND FREE PRODUCT RECOVER AT CHICORA TANK FARM CNC CHARLESTON SC

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SOLUTIONS TO ENVIRONMENTAL PROBLEMS, INC.

Quality Control Plan
for
Soil Remediation and Free Product Recovery
at Chicora Tank Farm,
Charleston Naval Shipyard,
Charleston, South Carolina

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Quality Control Plan
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Charleston Naval Shipyard,
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Acronyms

CTF	Chicora Tank Farm
HASP	Health and Safety Plan
QC	quality control
SCDHEC	South Carolina Department of Health and Environmental Control

1. INTRODUCTION

This plan provides quality control (QC) requirements for soil remediation and free product recovery at Chicora Tank Farm (CTF), Charleston Naval Shipyard, Charleston, South Carolina. The objective of this project is to remove and properly dispose of petroleum-contaminated soil and free phase petroleum product from three areas of concern at CTF. Additionally, activities associated with well abandonment, well installation, and groundwater and soil sampling will be conducted. Disposition of the debris and contaminated soil and water will be performed in a manner to prevent spillage on streets and adjacent areas. Installation and development of the groundwater monitoring wells will be completed in accordance with South Carolina Department of Health and Environmental Control (SCDHEC) Well Standards and Regulations R.61-71. The project activities will be performed in accordance with applicable federal, state, and local regulations.

2. QC PROGRAM

The QC program shall cover on-site work and off-site reporting/documentation and shall coincide with the work plan sequence. The QC program consists of:

- the QC manager;
- a QC plan;
- QC briefings;
- on-site QC work control; and
- QC certifications, sampling QC, chain of custody forms, using a certified laboratory, and sampling records and logs.

3. QC ORGANIZATION

As needed, the project QC manager will be at the work site to ensure work is performed in accordance with the work plan. The QC manager will conduct QC briefings, provide on-site QC surveillance, perform sampling, and prepare required QC certifications and documentation. The QC manager may perform other duties such as those of site supervisor. The QC manager is authorized to stop work based on quality or safety concerns.

The QC manager shall have a minimum of 5 years experience as an engineer, technician, inspector, quality/safety specialist, supervisor, or project manager. Additionally, the QC manager will be familiar

with the QC requirements involved in petroleum tank work and be trained or experienced in environmental sampling.

4. QC PLAN

The QC plan depends not only on the QC manager, but also on workers involved in the project. The QC plan covers both on-site and office work.

The QC manager may change the QC plan. These changes will be site specific and in the form of a clarification or in response to an unknown or unexpected work site condition.

5. QC BRIEFINGS

Before the start of site work, the QC manager shall conduct an initial QC briefing. The briefing is designed to familiarize workers with the QC aspects of the work. The briefing may be held in conjunction with the initial safety briefing.

6. THREE PHASES OF CONTROL

The QC manager shall examine the work using the "three phases of control" approach to ensure work complies with all requirements. The three phases of control are:

Preparatory Phase	This phase is performed before the start of work to ensure preparations for work are complete.
Initial Phase	This phase of control centers on observation of the work performance as it relates to the work plan, environmental protection plan, and the health and safety plan (HASP).
Follow-Up Phase	This phase involves examining completed tasks to ensure work was properly completed.

6.1 Preparatory QC Phase

The preparatory phase includes the following actions.

- The preparatory phase surveillance/inspection/review will be conducted with the site supervisor responsible for the work.
- The work plan and environmental protection plan will be reviewed.
- Staged materials and equipment will be checked to ensure they are available, ready for use, and conform to the work plan.
- The work site will be examined to ensure the area is satisfactory and ready for work to begin.
- Training requirements will be reviewed to ensure that they are met, documented, and on file.
- Work/construction methods and controls will be discussed.
- The Health and Safety Plan (HASP) will be reviewed to ensure applicable safety requirements are met.

6.2 Initial QC Phase

The initial phase includes the following actions.

- The site supervisor will observe the initial segment of each new work phase to ensure the work complies with the work plan.
- QC personnel will establish that workmanship quality is satisfactory.
- QC personnel will ensure that applicable safety requirements are met.

6.3 Follow-Up Phase

The follow-up phase includes the following actions.

- Work will be reviewed to ensure that it complies with all requirements, and that quality has been maintained.
- Sampling and field analysis should be performed and properly recorded if necessary.

7. SAMPLING AND ANALYSIS

To determine whether the removal of petroleum contaminated soil was effective, the excavations at CTF will be sampled. Additionally, groundwater monitoring wells will be sampled within the excavated areas. Groundwater sample results will be used to characterize any water removed from the excavations for disposal.

Any field sampling and analysis will be performed by or under the direction of trained personnel. The QC officer will be trained or experienced in environmental sampling and will ensure that proper samples, sampling methods, preservation, and shipping comply with laboratory requirements. The QC manager or a designee will be on site for all environmental sampling at the project site.

7.1 Accredited Laboratories

The laboratory that performs the analyses will be approved by the Navy and certified by the South Carolina Department of Health and Environmental Control and will use U.S. Environmental Protection Agency analytical methods. The laboratory report of analytical results will include the South Carolina laboratory identification number.

7.2 Test Results

Laboratory test results will be included in the project closure report. Test results shall be validated and signed by a testing laboratory representative and will include the laboratory's assigned South Carolina laboratory identification number.

7.3 Chain of Custody

Chain-of-custody records provided by the laboratory performing the analysis will be used for all samples. Several samples may be entered on the chain-of-custody report, but a new chain of custody will be initiated for each worker taking samples. Samples will be temporarily maintained in a cooler at the work site, but the sampler must be able to maintain visual surveillance of the samples/cooler or relinquish custody to the site supervisor or another designated worker. When each series of samples is complete, the sample cooler shall be delivered to a representative of the applicable laboratory. A copy of the chain-of-custody report with the acceptance signature will be returned to the QC manager. A copy of the final chain-of-custody report will be forwarded to the QC manager with the laboratory analysis.

8. WORK LOG

The project manager or a designee will keep the work log in a bound field logbook. The log will cover a chronology of the well installation fieldwork recorded in brief statements. Examples of information entered in the work log are:

- details of the work performed;
- personal protective equipment (PPE), PPE changes, and reasons for the change;
- notes on required information needed for the completion report; and
- site sketches including, but not limited to, depth of monitoring well, location of monitoring well, well identification number, and depth to groundwater if encountered.

The work log will be signed and dated daily and will be maintained with the project files after completion of the fieldwork.

9. PROJECT DOCUMENTATION

A closure report will be prepared when fieldwork is completed. Project closeout will consist of submitting final site drawings, waste manifests, photo documentation, disposal certificates, and other documentation as appropriate. Project documentation will be completed within 45 days after fieldwork has ended.

10. REFERENCES

SCDHEC (South Carolina Department of Health and Environmental Control), *Well Standards and Regulations*, R.61-71.